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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,557	07/03/2003	Thomas Beisswenger	510.1073	6607

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EXAMINER

SPITZER, ROBERT H

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/613,557

Applicant(s)

BEISSWENGER ET AL.

Examiner

Robert H. Spitzer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-14 and 16-19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 04/14/2005.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-8,13,14,16,18 and 19 are again rejected under 35 U.S.C. 102(b) as being clearly anticipated by the membrane module structure of Harlow (2,618,357), wherein the diffusion device is formed from membrane modules which are rectangular shaped and are placed within a cylindrical housing.
3. Claims 9-12 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Harlow (2,618,357) in view of McBride et al. (3,336,730). The claims differ from the membrane module of Harlow ('357) in the edges of the membranes and their supports being rounded. McBride et al. ('730) show the use of such rounded edges in Fig. 4. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to structure the membranes and their supports in Harlow ('357) to have a rounded edge shape, in view of the showing of McBride et al. ('730), so that such components will have adequate strength to withstand the pressures being used in the operation of the membrane modules.
4. Claim 17 is again rejected under 35 U.S.C. 103(a) as being unpatentable over Harlow (2,618,357) in view of WO 01/70376. The claim differs from the structure of Harlow ('357) in there being a catalyst stage before the membrane device. WO 01/70376 shows that a membrane separation device can be constructed so that there is a catalyst stage which is before the membrane module in the flow direction of the feed gas. It would have been obvious to one of ordinary skill in the art, at the time the

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invention was made, to structure the device of Harlow ('357) so that the feed gas enters a catalyst stage before passing through to the membrane device, in view of the showing of such placement of a catalyst bed by WO 01/70376, in order to remove or change any components in such feed gas which might affect the operation of such membrane device.

5. Applicant's arguments filed April 14, 2005 have been fully considered but they are not persuasive. With respect to the Harlow ('357) reference, Applicants present two basic arguments. The first argument is that the Harlow apparatus "relates to the separation of gases in general with no specific teachings relating to hydrogen gas in particular". As applicants are well aware, with apparatus claims the included function of the device is given no patentable weight unless there is something in the body of the claim to limit such apparatus to that specific function. In applicants claims, the recitation of "for hydrogen separation" is an intended use and is given no patentable weight. There is nothing recited, such as membrane composition, for example, which is specific to "hydrogen separation". Thus, the generic membrane device of Harlow ('357) is appropriate for rejecting the claims, as it clearly shows placing a stack of flat membranes into a rotationally symmetrical pressure shell. The second argument made by applicants is that Harlow (357) does not show "a device for creating gas turbulence disposed in at least one of the feed spaces". The examiner does not agree because of the use of holes "68" in Harlow ('357), which holes are in at least one of the feed spaces and would cause the feed gas to diffuse out into the cylindrical shell for flow through the membrane device. Due to the pressure and flow velocity of the feed gas, these holes

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will cause the gas to be turbulent in its movement to the membrane stacks. With respect to the secondary references to McBride et al. and WO 01/70376, applicants state that these references do not cure the deficiencies of Harlow ('357). However, those references have only been relied upon to show the features specified in the above paragraphs, and such showings have not been disputed by applicants. Thus, their use in the rejection of the claims has been maintained. Any other remarks made by applicants and not specifically commented upon by the examiner, have been considered.

6. Applicants response to this Office action must also include the following editorial changes: para. [0062], line 1 "(8)" should be "(8a)"; and, in para. [0063], line 1, "be" should be inserted after "may". Also, in line 3 of claim 12, "the being accessible" makes no sense and it appears that there is missing text.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

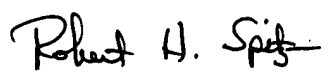
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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert H. Spitzer whose telephone number is (571) 272-1167. The examiner can normally be reached on Monday-Thursday from (5:30AM-4:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 6, 2005


Robert H. Spitzer
Primary Examiner
Art Unit 1724

June 6, 2005